

MALARIA 2002

No. 19, 2003

In 2002, there were 135 laboratory-notified cases of malaria in Denmark, [table 1](#), which is a decline from 2001 (154) and 2000 (205). The number of cases of malaria caused by *Plasmodium falciparum* (*P. falciparum*) has decreased from 106 to 88, including at least 62 cases from tropical Africa. In 2002, *P. falciparum* malaria was diagnosed in 70 Danish travellers and 18 immigrants, compared with 60 Danes, 45 immigrants and one with unknown status in 2001. The notified cases were distributed evenly throughout the year. Map of global malaria transmission can be found on the back page.

Primary prophylaxis

Prevention of mosquito bites is important, and several different mosquito repellents are now commercially available. Mosquito repellents can be effective for several hours, but do not provide protection for a whole night. Repellents may cause local irritation and cannot be used for children less than three years of age. A mosquito net impregnated with a synthetic pyrethroid and placed around the bed, provides up to about 50% protection. The net should be loose so that the user does not touch it during the night, and it should be rolled up during the day.

Pharmacological prophylaxis

The objective of pharmacological prophylaxis is to prevent the serious type of malaria caused by *P. falciparum*. All drugs have side effects, and when choosing prophylaxis, the risk of infection with *P. falciparum* must therefore be weighed against the risk of side effects and discussed with the traveller.

Recommendations for chemoprophylaxis have three levels:

- I: chloroquine;
- II: chloroquine and proguanil (Paludrine);
- III: mefloquine (Lariam), atovaquone/proguanil (Malarone) or doxycycline.

Chloroquine alone is used only for the Middle East and Central America.

Chloroquine and proguanil (Paludrine) are used in areas where the occurrence of resistance to chloroquine is reported as only sporadic. Mefloquine, Malarone or doxycycline is used in areas with high risk of infection with *P. falciparum* that is resistant to chloroquine, which is primarily in tropical Africa and Southeast Asia.

Table 1. Laboratory-notified cases of malaria, 2002

	South-/central				Not stated *)	Total 2002	Total 2001
	Africa	Asia	America	Oceania			
<i>P. falciparum</i>	62	0	0	0	26	88	106
<i>P. vivax</i>	2	9	8	0	11	30	38
<i>P. ovale</i>	3	1	0	0	2	6	5
<i>P. malariae</i>	6	0	0	0	0	6	3
Mixed	1	0	0	0	1	2	2
Not stated	1	1	0	0	1	3	0
Total	75	11	8	0	41	135	154

*) Including travellers to more than one continent

The three preparations are equally efficacious. The choice between mefloquine, Malarone or doxycycline is made in consultation with the traveller on the basis of the length of the journey and a consideration of possible side effects.

Malarone

Particularly in the case of Malarone, the preparation should be taken at the same time every day, along with a fatty meal, EPI-NEWS 19/02. Malarone is registered for stays of a maximum of 28 days in a malaria region.

Pregnant women

According to the WHO, mefloquine (Lariam) can be used in pregnant women after the 16th week of gestation, while doxycycline is absolutely contraindicated. There is little experience with Malarone during pregnancy, and for this reason it is currently discouraged. Thus, there is still no efficient malaria prophylaxis for pregnant women travelling to tropical Africa or Southeast Asia during the first trimester.

Children

According to the WHO, mefloquine (Lariam) can be given to children with a body weight down to 5 kg, in whom ¼ tablet is suggested, but this involves a relative overdose in comparison with adult dosage. For children who weigh less than 15 kg, therefore, mefloquine should only be used after thorough deliberation and in full agreement with the parents. Malarone can be given to children with a body weight down to 11 kg; tablets of ¼ adult strength are issued after application to the Danish Medicines Agency. Doxycycline is contraindicated for children under the age of twelve.

Self-treatment

Only preparations that have not currently been used as prophylaxis by

the traveller can be used. Malarone can be used for treatment of uncomplicated *P. falciparum* malaria. Quinine is still efficacious, except in northern Thailand. There may be interaction between mefloquine (Lariam) and quinine, affecting the heart rhythm, and quinine should therefore be used with great caution for the treatment of travellers who have used mefloquine as prophylaxis. Fansidar is not recommended for self-treatment because of resistance.

Malaria despite prophylaxis

SSI has asked patients notified with malaria about their choice of prophylaxis and about compliance.

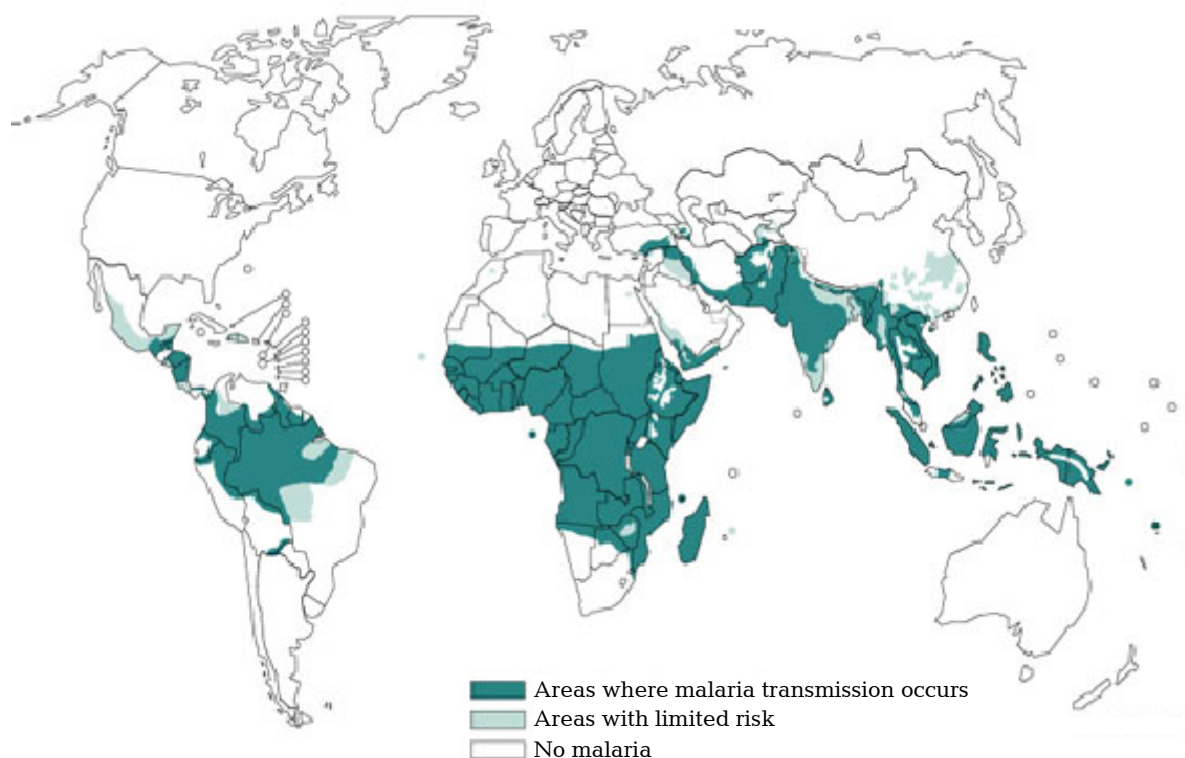
A total of 86 replied to the enquiry, and 54 replies could be used. Of these, 23 had not taken prophylaxis. Among the remaining 31, 3(0) had taken chloroquine alone (number in brackets indicates full compliance), 12(4) had taken chloroquine and proguanil, 6(3) mefloquine, 6(3) Malarone, 0(0) doxycycline and 4(2) another anti-malarial agent.

The result of the survey emphasises the importance of informing the traveller of the importance of full compliance, and that no anti-malarial agent is 100% effective.

According to information from the Danish Medicines Agency, the prescription of chemoprophylaxis against malaria in 2002 was such that 12,339 people received chloroquine; 18,712 people received proguanil, either alone (5,189) or in Malarone (13,812), and 2,140 people received mefloquine. Doxycycline has other important indications and a figure for use for malaria prophylaxis can thus not be stated. The figures do not show the number of times an anti-malarial agent was prescribed to the individual.

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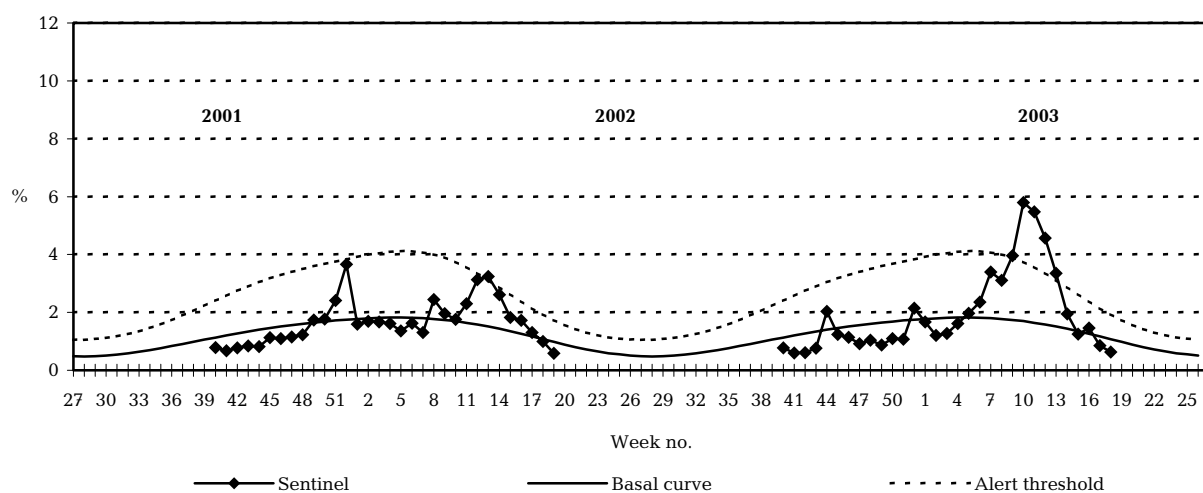
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Source: www.who.int.ith

Sentinel surveillance of influenza activity

Weekly percentage of consultations, 2001/2002/2003



Sentinel: Influenza consultations as percentage of total consultations

Basal curve: Expected frequency of influenza consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic

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